

Data Center Profiling Tool (DC Pro) Executive Summary

Overview: The US Department of Energy (DOE) Profiling Tool is software that helps organizations identify how energy is being purchased and consumed by their data centers and what energy efficiency improvements and technologies can be deployed to save energy and money. The Profiling Tool is a first step in identifying reduction opportunities by helping data center owners and operators quickly diagnose their energy use and begin identifying opportunities for savings. It accomplishes this by detailing how energy is used by your data center, describing your data center's savings potential, and pointing out some specific actions you can take to realize these savings.

Data Collection Requirements: To collect the input data required for the software, knowledge of data center energy performance in the areas of IT-equipment, air management, cooling systems, and electrical systems is required. To get started here is the short list of required data inputs:

- General description of the data center, including the total floor area broken down by data center and support space, the type of data center, uptime tier, and build-out level.
- Brief overview of the state of energy management policies and action plans
- Utility bill data
- Basic configuration and efficiency information for HVAC equipment such as cooling system type, condenser cooling system type and efficiency rating of cooling fans, pumps, and cooling towers.
- Basic configuration and information for air-handler units and IT-equipment, including the IT equipment air intake temperatures
- Basic configuration and efficiency information on electrical system components such as transformers, generators, uninterruptible power supplies (UPS), power distribution units (PDU), and lighting

Collection of the required inputs may take 2-3 days with the anticipated 1-2 hours spent on data and information entry.

Qualifications: A good understanding of data center operations and energy systems (IT-equipment, air management, cooling systems, and electrical systems) is required to operate the Profiling Tool.

Usage of the tool: Use the Profiling Tool as a first step to identify potential savings and to reduce environmental emissions associated with data center energy use. Once you acquire your input data, you can complete a profile in a couple hours and generate the report that identifies major energy consuming systems and associated potential energy savings. Here are the core components of the savings analysis:

- Overall picture of current energy use and efficiency
- Provide air-management recommendations
- Estimate the potential for reducing supply airflow rate and increasing supply air temperature
- Estimate the percentage of energy reduction for fans and chillers
- Estimate potential savings for various electrical system efficiency actions
- Estimate Power Usage Effectiveness (PUE) measured as the ratio of total energy used by a data center (including lighting, cooling, air movement and IT equipment) and energy consumed by the IT equipment only.

Ease of Use/Software Compatibility: The tool provided in two formats: online and downloadable.

System Requirements for the downloadable version:

- 32-Operating System
- Microsoft OS XP or higher
- Microsoft IE 7 or higher
- Administrative privileges on the local computer

System Requirements for the online version:

To ensure that you have complete access to all the functionality, it is recommended that you use a level one browser for administrative tasks. This includes Windows Internet Explorer 6 or higher. For more information, visit the [Microsoft Office Sharepoint Server 2007 requirements page](#).

Product roll-out roadmap: Version 2.0 of the software was made available in September 2011 on the Better Plants eCenter.